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10/726,441	12/02/2003	Osamu Kobayashi	GENSP109	6769

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EXAMINER
ABAD, FARLEY J

ART UNIT	PAPER NUMBER
2181	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/726,441	KOBAYASHI, OSAMU
	Examiner	Art Unit	
	FARLEY J. ABAD	2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2009*.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-9,11-16 and 19-22* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1,2,4-9,11-16 and 19-22* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *02 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)
1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *10/29/2009*.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

Status of claims

1.   Claims 1-2, 4-9, 11-16, and 19-22 are pending in the present application.

Response to Arguments

2.   Applicant's arguments with respect to claims 1-2, 4-9, 11-16, and 19-22 have

been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

3.   The information disclosure statement (IDS) submitted on 10/29/2009 is in

compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure

statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

5.   Claims 1-2, 4-7, and 19 are rejected under 35 U.S.C. 112, first paragraph, as

failing to comply with the written description requirement. The claim(s) contains subject

matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application

was filed, had possession of the claimed invention. Claim 1 is directed towards

segregating video data into data packets and control packets and the bi-directional

auxiliary channel carrying the control packets however, the specification does not

disclose **segregating** the video data into data packets and control packets. The

examiner has reviewed the specification and found that auxiliary channel 224 provides a

conduit for various support functions such as main link set up and to carry auxiliary

application data, however there is no mention that the auxiliary data is received with the

video data and then segregated. The examiner will interpret the control packets as

disclosed in paragraphs 0037-0039 and 0053. If there is indeed support for this

limitation, the examiner respectfully requests the appropriate paragraph[s] for this

disclosure.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   **Claims 1, 2, 4, 8, 9, 15, 16, 19, and 22 are rejected under 35 U.S.C. 103(a) as**

being unpatentable over Hwang et al (hereinafter Hwang), U.S. Publication No.

2003/0048852 A1, and further in view of Buschman et al (hereinafter Buschman),

U.S. Patent No. 4,479,142.

As per claim 1, Hwang discloses a packet based display interface arranged to

couple a multimedia source device to a multimedia sink device, comprising:

a transmitter unit [fig. 1, TMDS transmitter] coupled to the source device

[paragraph 0011, desktop or portable computer or other host] arranged to receive a

source video data stream containing video data [fig. 1, input streams; paragraph 0004,

video data from a host] in accordance with a native video data rate [fig. 5, it is

evidenced by the waveforms of figure 5 that D[23:0] arrive according to a clock] and to

segregate the video data into data packets and control packets [paragraph 0012, DDC

channel carries EDID data and control signals], the transmitter coupled to a cable [fig. 1,

TMDS link],

the cable coupling the transmitter unit to a the receiver unit [fig. 1, TMDS

receiver], the transmitter unit arranged to transfer the video data in the form of a number

of main link characters [paragraphs 0006, 0022, encoded words] at a link character

clock rate [paragraph 0064, auxiliary data is transmitted at half the data rate as the

video data, hence evidence of a video data rate which is equivalent to the link character

clock rate], wherein the cable further comprises:

a uni-directional main link line arranged to carry only the data packets from the

transmitter unit to the receiver unit [fig. 1, paragraph 0012, channels 0-2]; and

a bi-directional auxiliary channel line arranged to carry the control packets

between the transmitter unit and the receiver unit and vice versa [fig. 1, paragraph

0012, DDC channel].

Hwang does not explicitly disclose the link character clock rate is independent of

the native video data rate such that video data and the link character clock rates are

asynchronous to each other.

However, Buschman discloses the link character clock rate [col. 1, lines 56-65,

transmission rate clock] is independent of the native video data rate such that video

data and the link character clock rates are asynchronous to each other [col. 1, lines 56-

65, "it should not be expected that the transmission system clock rate can be imposed on the video signal generation and thus...the video signal will be asynchronous to the transmission rate clock" with emphasis on video signal generation and transmission system clock since video signal generation must be done according to a clock such as that described in Hwang fig. 5].

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous for the interface of Hwang to include the link character clock rate is independent of the native video data rate such that video data and the link character clock rates are asynchronous to each other because it would provide Hwang with the enhanced capability of saving the cost of additional overhead thus reducing overall data rate required [col. 2, lines 20-24].

As per claims 4, 11, and 18, Hwang discloses a display interface as recited in claim 1, wherein the bi-directional auxiliary channel line [fig. 1, DDC] is formed of a uni-directional back channel [fig. 1, paragraph 0012, bidirectional DDC channel] configured to carry information from the multimedia sink device to the multimedia source device and a uni-directional forward channel[fig. 1, paragraph 0012, bidirectional DDC channel] for carrying information from the multimedia source device to the multimedia sink device in concert with the back channel.

As per claim 8, Hwang discloses a method of coupling a multimedia source device to a multimedia sink device, comprising:

receiving source video data [fig. 1, input streams; paragraph 0004, video data from a host] in accordance with a native video data rate [fig. 5, it is evidenced by the waveforms of figure 5 that D[23:0] arrive according to a clock];

transferring the video data from a transmitter unit [fig. 1, TMDS transmitter] to a display [paragraph 0004, "to a monitor"] in the form of a number of main link characters [paragraphs 0006, 0022, encoded words] at a link character clock rate [paragraph 0064, auxiliary data is transmitted at half the data rate as the video data, hence evidence of a video data rate which is equivalent to the link character clock rate], wherein the video data is transferred solely over a uni-directional main link line [fig. 1, paragraph 0012, channels 0-2] of a cable [paragraph 0012, DVI cable] connected to the display [paragraph 0004]; and

transferring information regarding the video data to the display over a bi-directional auxiliary channel line of the cable [paragraphs 0012, 0025, DDC channel carries EDID data and control signals is used to setup transmission of the video data] .

Hwang does not explicitly disclose the link character clock rate is independent of the native stream rate such that video data and the link character clock are asynchronous to each other.

However, Buschman discloses the link character clock rate [col. 1, lines 56-65, transmission rate clock] is independent of the native stream rate such that video data and the link character clock are asynchronous to each other [col. 1, lines 56-65, "it should not be expected that the transmission system clock rate can be imposed on the video signal generation and thus...the video signal will be asynchronous to the

transmission rate clock" with emphasis on video signal generation and transmission system clock since video signal generation must be done according to a clock such as that described in Hwang fig. 5].

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous for the interface of Hwang to include the link character clock rate is independent of the native stream rate such that video data and the link character clock are asynchronous to each other because it would provide Hwang with the enhanced capability of saving the cost of additional overhead thus reducing overall data rate required [col. 2, lines 20-24].

As per claims 15 and 22, taking claim 8 as exemplary: Claims 15 and 22 only differs from claim 8 in that they are directed to a computer program product and a computer chip, respectively, rather than a method. However claims 15 and 22 are directed to the same limitations as claim 8. Therefore the rejection for claims 15 and 22 are the same as set forth above.

8.   **Claims 2, 9, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang, in view of Buschman, and further in view of Klemets et al (hereinafter Klemets), U.S. Patent No. 5,918,002.**

As per claims 2, 9, and 16, Hwang discloses a packet based display interface as recited in claim 1, wherein the uni-directional main link line contains a number of multimedia data packet streams [paragraphs 0056-0057, two streams of audio or audio and video streams].

The modified Hwang does not explicitly disclose each having an associated adjustable data stream link rate that is independent of the native video stream rate.

However, Klemets discloses each having an associated adjustable data stream link rate that is independent of the native video stream rate [fig. 4, steps 410-430].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the modified Hwang because it would provide the enhanced capability of reliable and efficient transmission of multi-media streams to clients [col. 2, lines 34-37].

9.   **Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang, in view of Buschman, in view of Klemets, and further in view of Woo et al (hereinafter Woo), U.S. Patent No. 5,425,101.**

As per claim 5, the modified Hwang does not explicitly disclose a display interface as recited in claim 2, wherein the uni-directional main link line further comprises: a number of virtual links each being associated with a particular one of the multimedia data packet streams wherein each of said virtual links has an associated virtual link bandwidth and a virtual link rate.

However, Woo discloses wherein the uni-directional main link line further comprises: a number of virtual links each being associated with a particular one of the multimedia data packet streams wherein each of said virtual links has an associated virtual link bandwidth and a virtual link rate [col. 3, lines 53-67].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the modified Hwang because it would provide the

enhanced capability of providing a wide range of services without providing an excessive number of virtual channels [col. 3, lines 20-24].

As per claim 6, the modified Hwang does not explicitly disclose a display interface as recited in claim 5, wherein a main link bandwidth is at least equal to an aggregate of the virtual link bandwidths.

However, Woo discloses a display interface as recited in claim 5, wherein a main link bandwidth is at least equal to an aggregate of the virtual link bandwidths [col. 3, lines 53-67].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the modified Hwang because it would provide the enhanced capability of providing a wide range of services without providing an excessive number of virtual channels [col. 3, lines 20-24].

As per claim 7, the modified Hwang does not explicitly disclose a display interface as recited in 5, wherein the source video data stream is packetized over a respective virtual link based upon a mapping definition.

However, Woo discloses wherein the source video data stream is packetized over a respective virtual link based upon a mapping definition [col. 3, lines 53-67].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the modified Hwang because it would provide the enhanced capability of providing a wide range of services without providing an excessive number of virtual channels [col. 3, lines 20-24].

10.   Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Hwang, in view of Buschman, and further in view of Woo.

As per claim 12, the modified Hwang does not explicitly disclose a method as

recited in claim 8, wherein the uni-directional main link line further comprises: a number

of virtual links each being associated with a particular one of the multimedia data packet

streams wherein each of said virtual links has an associated virtual link bandwidth and a

virtual link rate.

However, Woo discloses wherein the main link unit further comprises: a number

of virtual links each being associated with a particular one of the multimedia data packet

streams wherein each of said virtual links has an associated virtual link bandwidth and a

virtual link rate [col. 3, lines 53-67].

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to improve upon the modified Hwang because it would provide the

enhanced capability of providing a wide range of services without providing an

excessive number of virtual channels [col. 3, lines 20-24].

As per claim 13, the modified Hwang does not explicitly disclose a method as

recited in claim 12, wherein a main link bandwidth is at least equal to an aggregate of

the virtual link bandwidths.

However, Woo discloses a display interface as recited in claim 5, wherein a main

link bandwidth is at least equal to an aggregate of the virtual link bandwidths [col. 3,

lines 53-67].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the modified Hwang because it would provide the enhanced capability of providing a wide range of services without providing an excessive number of virtual channels [col. 3, lines 20-24].

As per claim 14, the modified Hwang does not explicitly disclose a method as recited in 12, wherein the source video data stream is packetized over a respective virtual link based upon a mapping definition.

However, Woo discloses wherein the source video data stream is packetized over a respective virtual link based upon a mapping definition [col. 3, lines 53-67].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the modified Hwang because it would provide the enhanced capability of providing a wide range of services without providing an excessive number of virtual channels [col. 3, lines 20-24].

11.   Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang, in view of Buschman, and further in view of Kasparian et al (hereinafter Kasparian), U.S. Patent No. 5,007,050.

As per claims 19-21, taking claim 19 as exemplary, Hwang does not explicitly disclose the packet based display interface as recited in claim 1, wherein the transmitter and the receiver are not connected by a clock line.

However, Kasparian discloses wherein the transmitter and the receiver are not connected by a clock line [col. 10, lines 32-53].

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous for the interface of Hwang to include wherein the transmitter and the receiver are not connected by a clock line because it would provide Hwang with the enhanced capability of reduction in cost and noise immunity [col. 1, lines 39-43].

Conclusion

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FARLEY J. ABAD whose telephone number is (571) 270-3425. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm EST.

   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Alford Kindred can be reached on (571) 272-4037. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

   Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/F. J. A./   /Alford W. Kindred/
Examiner, Art Unit 2181   Supervisory Patent Examiner, Art
                                                    Unit 2181